

## **TECHNICAL APPENDIX**

### **B.C.'S INVESTMENTS AND INITIATIVES**

#### **B.C. Budget 2019 \$20 Million Investment in Mining Oversight:**

This \$20 million investment over the next three years establishes separation between the Ministry of Energy, Mines and Petroleum Resources' (EMPR) Mines Competitiveness and Authorizations Division, and the Mines Health, Safety and Enforcement Division. This restructuring and separation of roles aligns with other provincial regulators, including the Ministry of Environment and Climate Change Strategy (ENV), and best-practices across other mining jurisdictions. These new resources are focused on “boots on the ground” mine inspectors and creation of the Audit and Effectiveness Monitoring function, an independent unit tasked with conducting compliance audits and making recommendations to increase effectiveness of regulatory oversight.

Funding also establishes a standing Health, Safety and Reclamation Code review committee with representatives from labour unions, First Nations and mine management. This ongoing review process ensures that mining regulations remain relevant and can address the changing needs of the industry, environment, First Nations and all British Columbians.

#### **Investments & Compliance Tools 2016-2018**

Ensuring environmental compliance with regulatory requirements is one of ENV's principal objectives. This is achieved through the use of a variety of compliance tools ranging from promotional activities to advisory letters to court prosecutions, giving consideration to using the most appropriate tool necessary to obtain compliance, and when required, to promote general deterrence. Each situation is assessed on its own merits. The most appropriate response for each situation is chosen based on the best available information.

In 2016 ENV increased its focus on environmental compliance with a \$2 million uplift for compliance actions. From 2016 to 2017, the compliance team grew from 28 to 57 staff and has since maintained a staffing level between 45-55. These additional resources support the ministry's objective of environmental compliance through a variety of actions including promoting and assessing compliance in all sectors discharging waste including the mining sector and address non-compliances through a variety of tools including administrative monetary penalties and supporting court prosecutions.

Also in 2015, a position was created to specifically manage compliance work plans for the mining and pulp mill sectors. A team of compliance staff carry out these inspections. As a result, there have been heightened compliance efforts in relation to the mining sector and compliance and enforcement actions have steadily increased since 2016.

.../2

ENV's Compliance and Enforcement Policy and Procedure prescribes common requirements and procedures for all staff to ensure consistent and risk-based assessment and response to non-compliance with management oversight of complex or sensitive investigations. Provincial

inspectors also promote compliance through training, education, outreach and raising awareness of regulatory requirements. The compliance team has allocated dedicated staff to ensure adequate training of the inspectors and to promote compliance activities conducted with regulated dischargers, including the mining industry.

Administrative Monetary Penalties (AMPs) are one of the available tools to achieve compliance. Inspectors are empowered to make a recommendation to a statutory decision maker on whether to administer the penalties, based on observed non-compliance. AMPs administered to mining companies with potential transboundary implications include the following, all of which have been paid:

Year	Company	Operation	Amount
2016	Copper Mountain	Copper Mountain	\$4,500
2017	Teck Resources	Line Creek	\$52,500
2017	Teck Resources	Line Creek	\$13,000
2017	Teck Resources	Line Creek	\$12,600
2017	Avino Silver & Gold Mines Ltd.	Bralorne Gold	\$73,150
2018	Teck Resources	Greenhills	\$22,000
2018	Teck Resources	Elkview	\$37,500
2018	Red Chris Development	Red Chris	\$14,800

### **Polluter Pays**

ENV and EMPR regulations and policies are based on the polluter pay model. In the context of mining, amendments recently made to the *Environmental Management Act* (EMA) strengthened the ability to recover costs of environmental clean-up, clarified requirements for environmental restoration, and added new penalties for incomplete restoration.

The EMA also provides the Minister with authority to draw from the consolidated revenue fund, if needed, to pay for immediate response to an environmental emergency.

In April 2018, ENV increased waste discharge fees and annual contaminant fees under the *Environmental Management Act* by 21%. This fee increase has boosted the ministry's resources for monitoring and oversight, building on previous investments in ENV's regional offices.

In addition, permit application fees and base annual charges for permit or approval were increased by 100% in April 2018. These fees go into the Sustainable Environment Fund which pays for a large portion of the salaries of staff responsible for authorizations and compliance in B.C.

.../3

## **Water Quality Monitoring and Regulation of Waste Discharges in B.C. through the *Environmental Management Act*:**

ENV is responsible for protecting human health and the environment from pollution under the *Environmental Management Act* and the *Integrated Pest Management Act*. ENV is committed to promoting strong oversight of pollution from major projects in B.C. The tools identified below make up key aspects of B.C.'s approach to water quality monitoring and regulation of waste discharges.

- Applications for permission to discharge waste:
  - The Waste Discharge Regulation defines what industries, activities and operations require authorizations to discharge or release waste to the air, water, and land under the EMA in B.C.
  - B.C. uses a risk-based approach for these applications, meaning that if an application poses a high risk to the environment or human health then it is required to include very detailed information regarding:
    - The environmental setting such as the hydrology and meteorology of the area;
    - Living plants, animals or humans that may be exposed to pollution, (which ENV refers to as receptors);
    - How the applicant proposes to mitigate and/or manage and treat the proposed discharge and any potential exposure to identified receptors;
    - Prediction and assessment of the environmental effects from the proposed discharge; and
    - How the applicant proposes to monitor the activities associated with the proposed discharge.
  - Once a completed application is received and ENV is satisfied that it includes all the necessary information, it goes through a rigorous review by experts in pollution control technologies and environmental impact assessment.
  - After the experts have fully reviewed the application, a comprehensive technical package is prepared for the ministry's statutory decision-maker. This includes recommendations for things like limits on the release of contaminants, requirements for monitoring and reporting, requirements regarding the type of pollution control works and other matters.
- Environmental Impact Assessments (EIAs)
  - As part of B.C.'s assessment of project proposals, EIAs are prepared by third party qualified professionals.
  - An EIA is a detailed study of the environment that would be impacted by a proposed project. EIAs are conducted to determine whether there are, or will likely be, human health or ecological effects from a proposed development or discharge. EIAs include things like:
    - A comparison of the proposed discharge to environmental benchmarks;
    - Identification of impacts to the most sensitive receptors;
    - Consideration of cumulative impacts; and

.../4

- Modeling and calculations to assess how pollution can be expected to disperse or become distributed in the environment.
- B.C. is also strengthening governance of qualified professionals, including those who prepare EIAs. Following an independent review of the professional reliance model, B.C. recently passed the *Professional Governance Act* (PGA). The PGA strengthens governance of professionals who work in B.C.'s natural resource sector.
  - The PGA established an Office of the Superintendent of Professional Governance in the Ministry of Attorney General to support government oversight of the regulatory bodies who govern engineers, geoscientists, biologists, agrologists, applied science technologists and technicians, and foresters.
  - The Office will administer and enforce the PGA, develop policy on professional governance, and administer the existing governance statutes of the professions in scope until they are repealed and replaced by regulations under the PGA.
  - The Office will work closely with the regulatory bodies and across government to ensure a smooth transition.

#### **Improvements to B.C.'s Environmental Assessment Processes under the *Environmental Assessment Act*:**

- When a major project is proposed in British Columbia, it must undergo an environmental assessment. This process ensures that any potential environmental, economic, social, heritage and health effects that may occur during the lifetime of a major project are thoroughly assessed.
- Environmental Assessments are managed by the B.C. Environmental Assessment Office (EAO), a neutral regulatory agency within the provincial government that works with and seeks input from scientific professionals, Indigenous Peoples, proponents, the public, local governments, and federal and provincial agencies to ensure that no adverse effects are missed.
- B.C. has agreements with Montana, Washington and Alaska regarding projects requiring environmental assessments that may have transboundary effects. These agreements specify opportunities for the U.S. jurisdictions to participate in B.C.'s environmental assessment process.
- In November 2018, a new B.C. *Environmental Assessment Act* (EA Act) was passed and is planned to be implemented in fall 2019.
- The three objectives of the new EA Act are:
  - Enhancing public confidence;
  - Advancing reconciliation with First Nations; and
  - Protecting the environment while offering clear pathways to sustainable project approvals.

.../5

- Specific changes in the new EA Act that support public confidence include:
  - Required matters that must be considered in each environmental assessment, including cumulative effects;
  - Ability to require reports on effectiveness of mitigation measures and update certificates based on the results of those reports; and
  - New tools to enhance EAO's compliance and enforcement program, including administrative monetary penalties up to \$750,000.
- Specific changes in the new EA Act that advance reconciliation and support the UN Declaration on the Rights of Indigenous Peoples include:
  - Requirement for the EAO to seek to achieve consensus with participating Indigenous Nations throughout the EA process;
  - Opportunity for participating Indigenous Nations to notify the EAO of consent or lack of consent at two key decision points; and
  - Creation of a time bound, non-binding dispute resolution to help reach consensus, if requested.

### **Enhancing Transparency**

- Ministries continue to enhance transparency through public reporting and have made considerable progress, for example:
  - The joint EAO, EMPR, and ENV [BC Mine Information Website](#) includes authorizations, inspection reports, dam safety inspections, emergency response plans and related documents.
  - ENV reports compliance and enforcement actions, as well as inspection reports under the EMA, on the [Natural Resources Compliance and Enforcement Database](#).
  - The [Natural Resource Environmental Compliance Twitter account](#) highlights key activities and accomplishments.
  - ENV continues to provide an 'Overview on the Mining Sector' in annual EMA [Compliance Reports](#). This currently provides three years of data to inform trends.
  - Under the [B.C. Mining Compliance & Enforcement Strategic Plan](#) the ministries publish an [annual operating plan and annual report on progress](#).
  - EMPR publishes estimated liability and the security held for metal and coal mines in the [Chief Inspector of Mines' Annual Reports](#).

## **COOPERATION WITH NEIGHBOURING U.S. STATES**

### **Collaboration with Alaska:**

- The foundation of the B.C.-Alaska collaboration and commitment to the protection of our shared rivers is captured in the [\*Memorandum of Understanding and Cooperation between the State of Alaska and the Province of B.C.\*](#), and underpinned by the [Statement of Cooperation on the Protection of Transboundary Waters \(SoC\)](#) and the Bilateral Working Group, to which both B.C. and Alaska are parties.
- Through these agreements, B.C. and Alaska have collaborated to develop a number of initiatives, including:

.../6

- Establishing the Bilateral Working Group and the Technical Working Group on Monitoring.
- Developing reciprocal procedures that ensure the State of Alaska has an opportunity to provide input to B.C.'s regulatory processes and decisions, as well as providing the U.S. Environmental Protection Agency and local interest groups in the U.S. to engage with B.C. through Alaska.
  - (For more information on reciprocal procedures please see the Statement of Cooperation on the Protection of Transboundary Waters between Alaska and British Columbia, Attachment 2: Reciprocal Procedures.)
- Development of a master project list of all mining activities occurring in the transboundary area, which is updated and discussed on a monthly basis.
- Development of a Communication Plan to enhance transparent communication related to significant natural resource projects that could impact watersheds and marine waters in the transboundary region. This includes a transboundary website that is accessible to the public.
- Establishing the Joint Water Quality Monitoring Program for Transboundary Waters as a collaborative initiative operating under the guidance of the Technical Working Group on Monitoring. This program is collecting and sharing water quality data from before, during and after mining and other industrial activity in key transboundary rivers. It includes participation from various agencies, U.S. Tribes, First Nations and industry.
- B.C. consulted on development of these programs with First Nations in B.C., including the Tahltan Nation and Taku River Tlingit First Nation who have been directly involved with monitoring efforts under the Joint Water Quality Monitoring Program for Transboundary Waters.
- These efforts promote and are dependent upon shared principles of transparency, collaboration and building understanding of each jurisdiction's processes, regulations and interests.
- As part of the implementation of the B.C.-Alaska SoC, B.C. continues to work closely with Alaska to ensure Alaska is involved in the assessment and permitting of existing and proposed mines in the transboundary watersheds including Red Chris, Brucejack, Red Mountain, and Premier.
- Additionally, under the SoC, B.C. and Alaska continue to collaborate on site remediation and reclamation plans for the Tulsequah Chief Mine site.
- B.C.'s goal is to continue to build upon the momentum of these efforts to ensure continued protection and oversight within the transboundary waters we share.

#### **Collaboration with Montana:**

- The foundation of B.C.-Montana collaboration on regional ecosystems and shared protection of transboundary waters is captured in the Environmental Cooperation Arrangement Between the Province of British Columbia and the State of Montana and

.../7

underpinned by the Memorandum of Understanding and Cooperation on Environmental Protection, Climate Action and Energy, which also provides for reciprocal opportunities for Montana to participate in B.C.'s environmental assessment process.

- In recent years B.C.'s relationship with Montana has been focused on assessing and managing transboundary impacts from mines in the Elk Valley through the Lake Koocanusa Research and Monitoring Working Group (LKRMWG).
- The LKRMWG is a cross-border forum through which site-specific criteria and water quality guidelines for the Koocanusa Reservoir are discussed and recommended, as well as a forum for discussing cumulative effects in the watershed. It has established common resources for open sharing of data and information by our two jurisdictions.
- The LKRMWG includes representatives from U.S. federal and state agencies, First Nations and U.S. Tribes, stakeholders, industry, non-governmental organizations and experts.
- The LKRMWG is currently working towards the finalizing of a draft water quality objective/criteria for selenium in Lake Koocanusa, targeting completion by 2020. By working closely with Montana and the other LKRMWG members, B.C. is working to establish a common water quality objective/criteria for selenium on both sides of the border. Additional objectives/criteria for other substances could also be developed in the future. (Note the equivalent of B.C.'s water quality objectives are called water quality criteria in Montana).
- Participation and support from First Nations is very important to B.C. Working closely with Montana we have recently expanded the role of representatives from First Nations and U.S. Tribes on a key technical sub-committee. B.C. is also beginning discussions with the Ktunaxa Nation Council to explore pathways for collaborative development of the final water quality objective that will be implemented in the B.C. portion of Koocanusa Reservoir.
- Outcomes of LKRMWG's work will be incorporated into the Elk Valley Water Quality Plan (EVWQP).
  - The EVWQP is an area-based management plan for the Elk Valley. It is intended to stabilize and reverse increasing concentrations of selenium, nitrate, cadmium and sulphate resulting from the operation of Teck's mines in the valley.
  - After ENV approved the EVWQP in 2014, a permit was issued to require Teck Coal to implement the plan.
  - After ENV approved the EVWQP in 2014, a Permit under EMA was issued to require Teck Coal to implement the plan. Amendments to relevant *Mines Act* permits have also been issued to incorporate plan requirements, including adjustments to bonding.
  - The EVWQP includes targeted Site Performance Objectives for each management unit in the watershed, and Compliance Limits set in the EMA permit for each Teck operation at key locations.
  - An implementation plan adjustment is being finalized, which will provide information regarding Teck Coal's plans for continuing to implement treatment facilities to work towards achieving compliance with the targets set out in the EVWQP.

.../8

- In addition, B.C. and Montana recently established the Koocanusa Reservoir Transboundary Monitoring Task Group as a collaborative project. The task group is working to facilitate joint monitoring efforts across the border by addressing logistical and regulatory challenges posed by the international boundary. This two-year project is promoting transparency and shared data between our jurisdictions.
- B.C. and Montana are also working to finalize a Memorandum of Understanding that will provide further guidance and support to the LKRMWG and its members.

#### **Collaboration with Washington:**

- British Columbia and Washington State have enjoyed a collaborative working relationship since the creation of the Environmental Cooperation Agreement (ECA) in 1992.
- The ECA and the Environmental Cooperation Council have a successful history of promoting and coordinating mutual efforts to ensure the protection, preservation and enhancement of our shared environment for the benefit of current and future generations.
- The ECA has proven to be a very effective model and was recently renewed in 2018.
- Over the years cooperative efforts have focussed on, but were not limited to, water quality, water resource management, regional air quality, solid and hazardous waste cooperation, wetlands protection and coastal and ocean management.
- In June 2001, the Washington Department of Ecology and the B.C. Ministry of Environment and Climate Strategy (formerly B.C. Ministry of Water, Land and Air Protection) entered into a Memorandum of Understanding (MOU) regarding Environmental Assessments. Under this MOU the state and province make every effort to share information, consult with one and other, and coordinate their work on environmental issues that have the potential to affect resources and residents in the border region.
- In keeping with these agreements, provincial and state regional offices are included in the distribution of environmental assessment notifications for major projects located within 100km or less from the border between the two jurisdictions.